

Upcoming Flight

Dr. Wenying Su is working with Dr. Steve Katzberg to send a NASA Langley GPS/Earth Radiation Budget package on Nightglow Ultra Long Duration Balloon (ULDB) flight (<http://nightglow.gsfc.nasa.gov/docs/gamcosray/hecr/NightGlow/ng.html>). The ULDB will be launched from Alice Spring, Australia in January 2003 for a four-week flight.

The Earth Radiation Budget package includes two paranometers: Eppley PSP (modified with dome thermistor) and CM22, and one pyrgeometer: Eppley PIR. These three radiometers will be mounted on the feet of the gondola, the lowest frame of the platform to ensure a clear field of view (see attached Fig.). The main objective is to measure the Earth-atmosphere reflected shortwave and emitted longwave fluxes at the altitude of about 35 km. High altitude balloon offers a unique opportunity to measure flux directly from a stratospheric platform. As we mentioned earlier, radiance-to-flux conversion process is the principal source of uncertainty in instantaneous fluxes estimated from satellite radiance measurements, direct flux measurements from ULDB will be a very valuable validation dataset for satellite Earth radiation budget measurements.

Future work includes developing and testing radiometers suitable for balloon application. Designing systems that can protect the radiometers that their domes won't be damaged when landing, hence make the recovery of the radiometers possible for the post flight calibration possible.

Radiometers for Nightglow

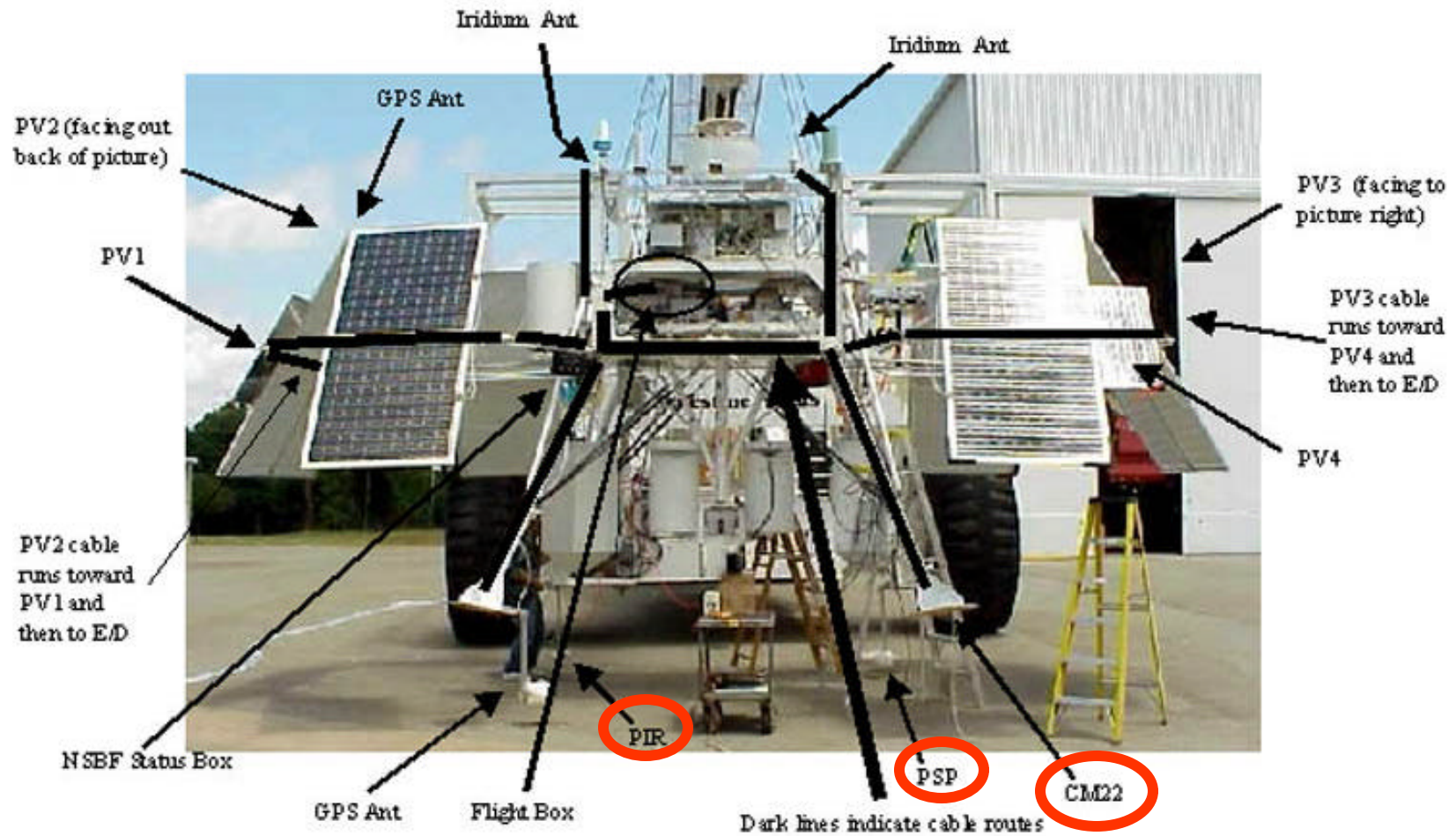


Modified PSP

thermistor

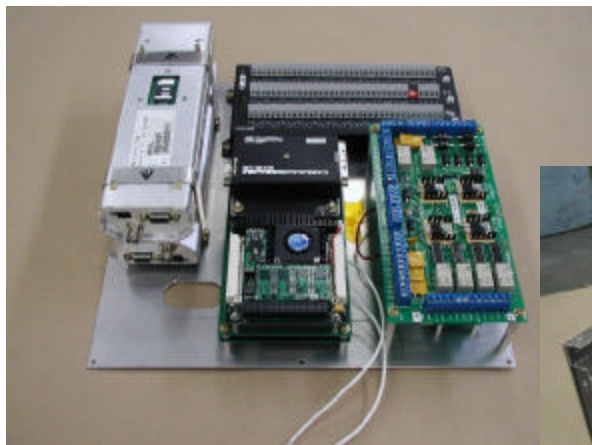


ULDB Gondola

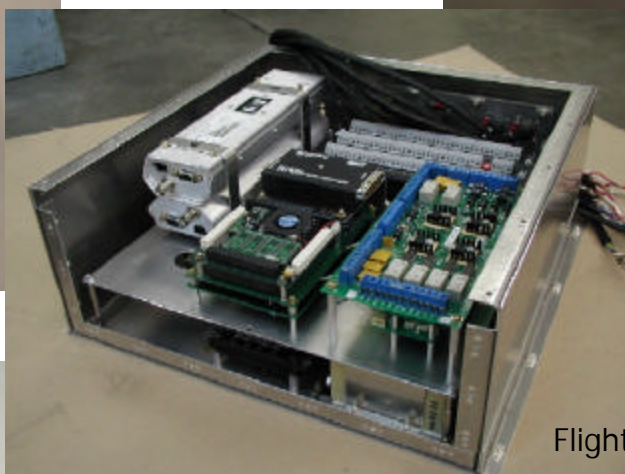


Electronic Box

Flight Electronics (Level 2)



Connector Panel



Flight Box



Flight Electronics (Level 1)

Flight Electronics (Rear View)



Flight Electronics (Top View)

Attributes

- 25 lbs.
- 15" x 15" x 6-3/8"